MINORU CENTRE FOR ACTIVE LIVING

LOCATION
Richmond, British Columbia

SIZE
10,220 m²

COMPLETION
2018

ARCHITECTS
HCMA Architecture + Design

STRUCTURAL
Fast + Epp Structural Engineers

GENERAL CONTRACTOR
Stuart Olson Construction Limited

ENGINEERED WOOD SUPPLIER/FABRICATOR
Western Archrib

PROJECT OWNER
City of Richmond

Project Overview

Designed to support active living and wellness for all ages, the new Minoru Centre for Active Living was built to meet the changing needs of the Richmond community and to increase services for aquatics users, seniors and others. The new centre replaced an aging and outdated group of buildings, and has become a true community facility, combining three spaces, including aquatics, a centre for older adults and outdoor field sports. Wood was chosen for the Minoru Centre to serve as an expressive, rhythmic material creating a sense of 'flow.'

The concept of 'flow,' derived from Richmond's river delta, drove the design and resulted in a hybrid glulam/steel-frame roof that wraps three diverse program spaces into one continuous building form. Wood brings warmth and natural movement across the structure, connecting the different rooms.

The use of wood also provided structural benefits. Richmond has a high water table that results in soil instability, so wood's light weight reduced the overall weight of the structure, which simplified the foundation requirements. Glulam beams will provide durable performance in the aquatics space, and since pools tend to be noisy, wood's natural acoustical properties were also an advantage.

Rendering courtesy of HCMA Architecture + Design

"The City of Richmond's goal was to develop an iconic facility, so wood became a material of choice for the undulating roof. Wood has a highly aesthetic appeal, while delivering the required durability, acoustic and structural characteristics necessary for the project."

***Jim Young PE**, Senior Manager of Capital Buildings Project Development, City of Richmond*

Wood Use

Spruce glulam beams, 80mm wide x 450mm deep, were used as exposed structural joists to create an undulating roof form which extends throughout the structure. The roof consists of glulam beams with 10 different radius profiles - a requirement that would have been too expensive to accomplish with steel. The beams diverge smoothly from one another to create a rhythmic flow and form clerestory windows and skylights, bringing natural daylight deep into the interior spaces. Glulam beams are easy to shape and modify, and spruce was chosen because it was economical, more consistent in colour, and could be locally sourced.

The structure was designed with big exterior overhangs, and glulam was used both inside and out to maintain the visual flow. To protect the glulam beams which extend to the exterior, fabricators added a face lam, an extra layer of wood veneer, to shield the end grain of the wood from the elements. For visual continuity, glulam beams start at the base of the wall on the one side, then extend up the wall and over the roof and down the other wall. Designers worked to make the beam connections as invisible as possible to create smooth surfaces uninterrupted by steel connections. The resulting roof structure seems to float over the interior.

Rendering courtesy of HCMA Architecture + Design

ESTIMATED ENVIRONMENTAL IMPACT OF WOOD USE

- Volume of wood products used: **230 cubic meters**
- U.S. and Canadian forests grow this much wood in: **1 minute**
- Carbon stored in the wood: **186 metric tons of CO_2**
- Avoided greenhouse gas emissions: **395 metric tons of CO_2**
- Total potential carbon benefit: **581 metric tons of CO_2**

GHG EMISSIONS ARE EQUIVALENT TO:

- **123** cars off the road for a year
- Energy to operate **61** homes for a year

**Estimated by the Wood Carbon Calculator for Buildings, cwc.ca/carboncalculator.*

**CO2 refers to CO2 equivalent.*

FOR MORE INFORMATION

This profile is published by Forestry Innovation Investment, the Government of British Columbia's market development agency for forest products.

For more examples of innovative wood building projects throughout British Columbia, visit:

naturallywood.com

The wood grain featured in this profile is western red cedar.